

MAY 17 1955

# Citrus Industry

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**STACKS**

Vol. 36 — No. 5

MAY, 1955

Insect Control  
for May, 1955

Advisory Committee  
Recommendations  
To Combat  
"Leading Decline"

Spot And Factors  
Leading To Its Intensity  
And Control In  
Florida Citrus Groves

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R. M. Pratt

# Citrus Insect Control



R. B. Johnson

## For May 1955

W. L. THOMPSON,  
R. M. PRATT  
R. B. JOHNSON\*  
Florida Citrus Experiment  
Station, Lake Alfred



W. L. Thompson

Six-spotted mite infestations have become widespread in most areas and are still on the increase. Grapefruit groves, especially have been severely damaged. The rains of the last month seem to have had some effect in reducing the severity of the outbreak, but it is not expected that the peak of infestation will be reached before the middle of May and further damage may be expected in many groves.

Purple mite infestations are declining after reaching record peaks in March and April. Activity is still high, and if the weather is normally dry in May, damage may be expected to be severe in May and June.

Purple scale activity was at a high level through April, and infestations may be expected to increase through May and June. The level reached will probably be about the same as in the last two years. Red scale infestations are expected to be at a normal level in May.

Rust mite infestations have been low in the past two months. Activity is expected to increase slowly in May and more rapidly in June. A more rapid increase is expected in the West Coast, Ridge, and Bartow Districts than in other areas.

Mealybug infestations are increasing and are expected to be more severe than usual this season. The peak of infestations will probably be reached some time in June.

### SPRAY PROGRAM

Most post-bloom sprays have been applied, but as in other years, it will be necessary to do some spraying in May. In groves where six-spotted mites were not controlled earlier in the season, some treatment may be necessary. Heavy infestations of purple mite should also be controlled, especially if the weather is dry. Although it is exceptional, a combination of dry weather and purple mite has caused some spring flush leaves to drop as well as causing a consider-

able amount of mesophyll collapse. May is also a good time to reduce the rust mite population to a minimum so scale control operations will not be delayed in June and July because of the necessity of controlling rust mites. Groves that were sprayed post-bloom with oil should be carefully checked for rust mites, especially during the latter part of May and early June. Even sulfur sprays are not likely to control rust mites from the middle of March or the first of April through June or into July. During May and June, an apparent light rust mite infestation can develop into a heavy one in a period of two to three weeks. Scale control is not advisable in May unless the infestation is so heavy that too much damage will develop before June. During most of May, oranges, Temples and tangerines will be of a size ( $3/4$  inch to  $1\frac{1}{2}$  inches in diameter) when oil is likely to cause oil blotch. The percentage of scales in the younger stages is also likely to be low. Where one scalecide application is to be depended upon to control scales for a year, it is thus advisable to wait until mid-June to start the spray operation. However, there are exceptions where a scalecide is desirable. If the grove is infested with mealybugs, a May application of parathion is recommended in preference to one in June or later. The mealybug application will also control scale and if it does build up in the fall, a second application of parathion can be made at that time.

**Scale Control:** If scale control is necessary on oranges, Temples, or tangerines, use parathion 15 percent wettable powder at 1.6 pounds per 100 gallons. If some other form of parathion is preferred, use 0.25 pound of actual parathion per 100 gallons. The same dosage of parathion can also be used on grapefruit, or oil can be used as it is not so likely to cause a blotch on grapefruit, but at times some injury has developed from a May application.

**Mealybug Control:** Use parathion at 0.25 pound of actual parathion per

100 gallons (1.6 pounds of 15%) on oranges, Temples and tangerines. On grapefruit use the same dosage or a combination of 0.7% oil plus 1 pound of 15% parathion. A very thorough coverage is necessary because most of the mealybugs are under the calyx, around the stem of the fruit, and on the tree trunks.

**Six-spotted Mite Control:** The most effective materials are overex, aramite and oil. Lime-sulfur, 2 gallons per 100, plus 5 pounds of wettable sulfur is also effective if applied thoroughly but not as effective as the other materials. Wettable sulfur should be used with all materials except oil for rust mite control and to help spread the miticide.

**Purple Mite Control:** The same materials, except lime-sulfur, can be used for the control of this mite as for six-spotted mite. However, oil should not be used where it may cause oil blotch or if the weather is dry.

**Rust Mite Control:** To repeat, May is an opportune time to get the rust mite population to a low level before it is time to apply the summer scalecide sprays. Lime-sulfur 1 gallon plus 5 pounds of wettable sulfur per 100 gallons is the most effective combination. Wettable sulfur 8 to 10 pounds per 100 gallons is also effective. Use the lower amounts of sulfur if a thorough spray is applied and the higher amounts for a brushing spray. During dry weather a sulfur dust may be used for light infestations.

For more detailed information refer to the 1955 "Better Fruit Program" or consult the Citrus Experiment Station at Lake Alfred or Fort Pierce.

You had better think twice before calling for that second helping. In *Living in the Later Years*, published by the University of Florida Press, a contributor states: "Overeating is the only form of suicide tolerated by our customers, but probably the most painful and tortuous."

About 600 million cakes are now baked annually with cake mixes.

\* Written April 25, 1955. Reports of surveys by Harold Holtsberg, Cocoa; J. W. Davis, Tavares; K. G. Townsend, Tampa; J. B. Weeks, Avon Park; and T. B. Hallman, Lake Alfred.

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Publication office at Bartow, Florida. Entered as second class matter February 16, 1920, at the post office at Tampa, Florida, under act of March 3, 1879. Entered as second class matter June 19, 1933, at the post office at Bartow, Florida, under act of March 3, 1879.

## Advisory Committee Offers Recommendations To

# Combat "Spreading Decline"

"Spreading Decline" which has proven an almost insurmountable puzzle to various citrus authorities and to many Florida growers is today regarded as one grower put it "to be the most serious and alarming threat that the Florida citrus industry has ever faced."

Although this infestation was first noted years ago it was not until 1935 that trouble from this source arose in various groves over the state, and while considerable work and study was applied to ascertaining the cause of this trouble it was not until 1953 that Messrs. Suit and DeCharme established the cause of the trouble as the burrowing nematode.

So great has become the concern of growers over the past few years over the possible outcome of this infestation that the Florida State Plant Board, the Florida Citrus Experiment Station and the Florida Division of the Federal Department of Agriculture has been devoting a concentrated effort to find some effective means of controlling this dread enemy of one of Florida's greatest industries.

In an effort to set up a general over-all recommendation to handle this situation and to instigate a study of the means best suited to limit the further encroachments of "spreading decline" and to secure a comprehensive idea of the funds necessary to carry out such a suggested program the State Board of Control several months ago appointed a committee to be known as the Florida

— By —  
S. LLOYD FRISBIE



J. F. ALEXANDER, Chairman  
Florida State Plant Board's Spreading  
Decline Advisory Committee

State Plant Board's Spreading Decline Advisory Committee.

Those men named to the committee were: Franklin Ward, Avon Park; J. F. Alexander, Bartow; Leo H. Wilson, Bradenton; William Bishop, Citra; Vernon Saurman, Clearwater; Herbert Bolton, Dade City; Morton Howell,

Dade City; Floyd Wray, Davie; Douglas R. Igou, Eustis; Wilbur Charles, Florence Villa; Milton Link, Ft. Lauderdale; Perry Murray, Frostproof; Latt Maxcy, Frostproof; Lacey Thomas, Groveland; Howard Thulberry, Lake Wales.

Byron Herlong, Leesburg; G. W. Pringle, Leesburg; Grant Morthland, Ocala; Hugh Lalor, Opa Locka; A. H. Whitmore, Orlando; Chas. P. Fawcett, Orlando; R. K. Voorhees, Orlando; Dr. Wallace R. Roy, Plymouth; T. G. Mixson, St. Petersburg; J. B. Prevatt, Tavares; R. S. Edsall, Vero Beach; Dale Talbert, Vero Beach; W. C. Graves, Vero Beach; C. D. Kime, Jr., Waverly; Frank Chase, Windermere; Harry M. Smith, Winter Garden; Dr. J. T. Griffiths, Winter Haven; Frank Holland, Winter Haven.

The committee elected from their membership the following officers: J. F. Alexander, Bartow, chairman; Wilbur Charles, Florence Villa, vice chairman; A. H. Whitmore, Orlando, vice chairman; G. W. Pringle, Leesburg, vice chairman; Dr. J. T. Griffiths, Winter Haven, secretary.

After numerous meetings the executive committee recommended to the committee as a whole a budget and recommendations for the containment of spreading decline. The recommendations emanating from the office of Gardner, Chief of the Florida USDA, included suggestions concerning the treatment of nursery stock saying that "one of the important known methods by which spreading decline is spread is by means of in-

festated nursery stock, both citrus and ornamental. The committee stated that extensive work with various chemical treatments is needed to develop methods to kill all nematodes and root tissues without injuring the plants. \$8000 is recommended as a budget for this work.

It is also suggested that an extensive search be made for some means to rejuvenate the thousands of acres of citrus trees now in a severe state of decline through soil treatments which might be devised to eliminate or to reduce nematode populations to a point where new, healthy root systems could be maintained. The finding of such a remedy would enable soil treating with the trees in place without necessity of removing existing trees and fumigating the land. The proposed budget sets up \$12,000 for this study.

A further recommendation urges the research necessary to develop compounds which may move through the tissues of the tree and accumulate in the roots in sufficient amount to kill or repel nematodes. A large number of chemicals, it is stated, should be tested for possible value for such use. The budget suggested \$9000 be allocated for this purpose.

Another suggestion is that a study be made of root stocks as a long range solution to the present problem. Suitable root stocks say the committee must not only be nematode resistant, but they must have other attributes which make them desirable stocks from a horticultural standpoint. \$12,000 is the budget suggestion for this purpose.

Nematodes, other than burrowing nematodes are reported to be parasitic on citrus and to cause tree decline. Such decline, the committee states, may spread in a different pattern, but the results are very damaging. This investigation is set up for \$8000 in the budget.

The committee suggests that it is probable the chief reason for tree decline is root destruction caused by disease organisms which gain entrance or may be carried by invading nematodes. These disease factors need study, according to the committee, which recommends a budget item of \$8000 for this purpose.

The report states that little is known about burrowing nematodes relative to its cycle and mode of existence. More information on this subject it is suggested might disclose weakness on which to base methods of attack on this pest. So important did the committee believe research in this direction might be that they recommended \$18,000 in their pro-

posed budget for this purpose.

The committee recommended that the proposed items be immediately appropriated for the Florida USDA.

#### Would Expand Experiment Station

The report also included an itemized suggested outlay for a separate division for the study and research attendant to seeking the answer to this burrowing nematode. It is stated that the Citrus Experiment Station lacks men in the skilled technician category who can handle scouting nematode counts and direct field experiments, thus relieving the more highly trained personnel of the routine work which is too technical for the present type of assistants. \$45,000 is suggested as a budgetary item to cover this need.

#### State Plant Board

An increase in the funds available for the State Plant Board is recommended. The 1953-55 biennium appropriation for the Plant Board was \$1,211,209 and the committee recommends that this budget be increased to \$1,662,440 for the 1955-57 biennium.

#### Program For Containment

Specified recommendations for the containment of spreading decline were set up by the committee covering nurseries and citrus and avocado groves, as follows:

##### Ornamental Nurseries

1. Quarantine affected portion of any nursery.
2. Allow movement after approved control measures have been taken. If control measures are not available, destroy the infested nursery stock.
3. Treat infested area with approved control measures.
4. Prohibit replanting of such areas until released by the Florida State Plant Board.
5. Prohibit the importation of plants into Florida if they are infested with organisms causing a spreading decline.
6. Thoroughly review rules relating to the establishment of nurseries with the intention of inspecting the land before the establishment of any nursery.

##### Citrus Nurseries

1. Quarantine affected portion of any nursery.
2. Allow movement of nursery stock only after approved control measures have been taken.
3. Treat infested areas with approved control methods.
4. Prohibit replanting of such areas until released by Florida Plant Board.
5. Thoroughly review rules relating to establishment of nurseries with the intention of preventing the indiscriminate planting which now exists.

#### Citrus Groves

1. Prevent additional spread now by requiring that a 100 foot margin be drawn about any infestations which border on another individual's property. Trees in this area shall be removed and the soil treated by recommended control measures.
2. Remove any additional infested trees at owner's request and apply approved control measures to the infested soil.
3. Prohibit replanting of such areas until released by Florida State Plant Board.

#### Avocado Groves

1. Prevent additional spread now by requiring that a 100 foot margin be drawn about any infestations which border on another individual's property. Trees in this area shall be removed and the soil treated by recommended control measures.
2. Remove any additional infested trees at owner's request and apply approved control measures to the infested soil.
3. Prohibit replanting of such areas until released by Florida State Plant Board.

#### Proposed Total Budget

The advisory committee gave evidence of releasing the magnitude of the recommendations they had made in the expansive proposed biennium budget which they have recommended as necessary to carry out their suggested program.

This budget is detailed at length in the proposals they have submitted covering salaries, equipment, supplies and other items they consider essential and is divided into three main subdivisions.

For the survey and mapping unit they have recommended a total appropriation of \$1,080,000 for the two year period. For the treating units they established a total of \$579,600 as being needed, while for contractual services, insecticides and capital outlay the committee recommends a budget of \$1,853,000. The total of the three divisional operations amounts to \$3,512,600.

#### Presentation to Senate Committee

Earlier this month header by J. F. Alexander and Ed. L. Ayers, Plant Commissioner of the State Plant Board, a group from the committee went in Washington and made a presentation to the Senate subcommittee on agricultural appropriations.

In outlining the need Alexander and Ayers explained to the committee the effects of spreading decline upon the Florida citrus industry and detailed at some length the substation for items covered by the budget

(Continued on page 8)

# Greasy Spot And Factors

## Related To Its Intensity And Control

### In Florida Citrus Groves . . .

Greasy Spot is a leaf condition which has been recognized on Florida citrus for many years; however, it has only been during the past few years that it has become a major problem. This condition was common in the Falls of 1952 and 1953, but appeared to be somewhat reduced in the Fall of 1954. This paper outlines an experiment performed in 1954, and suggests that there are interacting factors which regulate the intensity of greasy spot.

In 1948, Thompson (3) suggested that there was a relationship between the degree of rust mite control and the intensity of greasy spot. Since that time efforts for control have been largely confined to vigorous attempts to maintain good rust mite control, particularly, during the summer months. Japanese workers (2) showed that greasy spot in Japan was caused by a fungus. Thompson and Fisher (1,4), working independently in 1953, demonstrated a relationship between copper sprays and greasy spot incidence. Fisher (unpublished Data) determined the presence of an unidentified fungus in greasy spot lesions as early as 1946. These facts suggest that a fungus is probably the casual agent in Florida. However, the intensity of the infection and its ultimate severity is apparently materially influenced by a large number of factors.

In the late spring of 1954, an experiment was designed to study three factors which were believed to affect the intensity of greasy spot; the presence or absence of rust mites; the effect of oil as compared with parathion as a scalecide spray; and the effect of the timing of fungicides in either June, July or August. A forty acre block and a twenty acre block of 8 year old Pink Marsh seedless grapefruit were used as the experimental area. The blocks were adjacent and were planted on Lakeland fine sand in Polk County. Both blocks had been severely affected with greasy spot for the past several seasons. In the south half of each block, good rust mite control was maintained from May to September.



— By —  
J. T. GRIFFITHS \*

In the north half, rust mites were allowed to build up after early June so that 80 to 90% of the leaves and fruit were infested by July 9th.

The east half of each block was sprayed with a 1.3% oil emulsion as a summer scalecide application and the west half with parathion (2 lbs, 15% wettable 100 gals) and sulfur (10 lbs, wettable sulfur/100 gals). Three fungicides, copper (copper oxychloride sulfate at 1½ lbs/100 gals), zineb (2 lbs 65% wettable powder 100 gals), and actidione (4 PPM) were applied about May 27, July 5, and August 5th. These were sprayed in an area where parathion was used as the scalecide and where rust mites were allowed to build up in numbers. The fungicide spray plots were in duplicate and consisted of 9 trees per plot. The oil or parathion sprays were applied between July 8 and July 21st.

A special sulfur spray was applied in the south half of each block in early June to insure a low rust mite population. On June 10, there were practically no rust mites in the south half and about a 10% infestation in the north half. At the time of the scalecide application on July 15, there

was a 7% infestation in the south half and a 90% infestation in the north half. The parathion-sulfur spray resulted in good rust mite control, but where oil was applied to the severe rust mite infestation, control was poor and a sulfur spray was necessary on August 6. On September 1, there were still practically no rust mites in the parathion-sulfur area, but the remainder of the oil sprayed sections required a sulfur application.

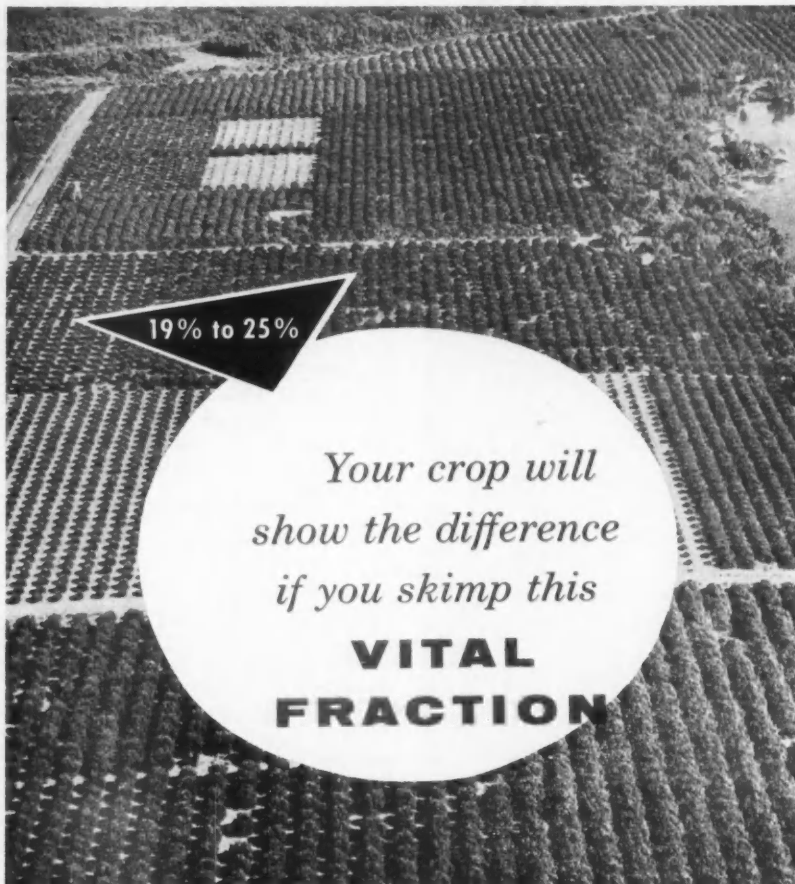
Rust mite control did not appear to be of significance in this experiment. No difference could be seen in the parathion sprayed areas between poor or excellent rust mite control. This was true when the first careful examination for greasy spot was made in October and was similarly true in early January when severe defoliation had taken place throughout the parathion sprayed area. In the oil sprayed areas, there appeared to be a slight tendency toward a reduction in the intensity of greasy spot in the area where rust mite control had been the best. Differences were not significant, however. These data suggest that there should be a re-appraisal of the consideration that rust mite injury is a factor in the formation of greasy spot. In the past, field and experimental evidence have always suggested to the author that rust mite control was a factor and he is not ready to completely repudiate such a theory. However, greasy spot can be extremely severe in the virtual absence of rust mite infestations. Although there were virtually no rust mites in one portion of the parathion sprayed area from early May to September 15, greasy spot formation had started by September 1. It was found almost exclusively on leaves which had flushed in early June. Thus they had never been subjected to anything which approached even a moderate infestation of rust mites.

In the past, it has been very difficult if not impossible to separate the effects of rust mite control in terms of the absence of rust mites from the effects of sulfur as a possible fungicide application. Thus, the application of either an oil or a sulfur spray, when rust mites increased in early

(Continued on page 10)

\* Presented before the annual meeting of the Cotton States Branch of The Entomological Society of America on January 14, 1955.





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#### ADVISORY COMMITTEE OFFERS RECOMMENDATIONS TO COMBAT "SPREADING DECLINE"

(Continued from page 6)

which they submitted and for which they sought federal aid to supplement any moneys which they might receive from the State of Florida to combat this infestation which now threatens this great Florida industry.

They called attention to the fact that federal funds have been made available in many comparable instances including tree fruits, row crops and livestock, citing that in the past federal and state units and funds have been used to combat the ravages of citrus canker, Mediterranean fruit fly, Texas fever tick, Japanese beetle, citrus blackfly and Mexican fruitfly, pink bollworm, golden nematode, white-fringed beetle, gypsy moths and grasshopper and mormon cricket control.

#### Report Inspections

Ayers' report disclosed that a total of 17,951 inspections for spreading decline had been made and that of this total 1,756 inspections disclosed the presence of spreading decline, in addition to which 415 groves reported to be affected by this infestation had been reported to the plant board where inspections had not been made.

He reported that a total of 101 nurseries in the state were now under quarantine, 38 of them being citrus nurseries, 5 citrus and ornamental, 4 citrus ornamental and general, 50 ornamental nurseries and 1 ornamental and general nurseries.

#### Counties Now Affected

His report showed that spreading decline has been located in the following counties: Brevard, Citrus, Collier, Dade, DeSoto, Duval, Hardee, Hendry, Highlands, Indian River, Lake, Manatee, Orange, Palm Beach, Pinellas, Polk, Sarasota and Volusia.

#### Many Groves Affected

Ayers' report showed that 891 groves were known to be affected by spreading decline, while the infestation has been located, but not mapped in 144 additional groves, while tree census enumerators have reported 387 groves where the decline was evident, although some of these may be duplications of groves already reported.

The report stated that approximately 60 growers have destroyed citrus trees and treated 793 acres of groves for spreading decline in 68 different groves. A total of confirmed 4448 acres of groves are already affected and this apparently does not begin to cover the entire acreage affected.

Thus far the report showed that groves affected by counties included



May, 1955

THE CITRUS INDUSTRY

Nine

Highlands, 44; Hillsborough, 2; Lake,  
3; Orange, 6; Pinellas, 5; Polk, 332.

#### Further Evidence

Included in the report submitted to the Senatorial committee were letters from leading growers over the state calling attention to the vital need for drastic steps being taken to prevent the further spread of the spreading decline which some of the growers referred to as the "most serious and alarming threat that the Florida citrus industry has ever faced."

Photographs graphically showing the affects of spreading decline upon various groves were also presented along with various graphs and charts showing the rapid development of the infestation and a table which indicated the loss which citrus growers of Florida might expect unless some immediate remedial measures were taken to control this infestation. This report indicated the potential loss to growers for the year 1950 due to spreading decline amounted to \$4,724,747 with the potential loss increasing each year potential losses estimated through the next 11 years at \$35,278,087 for a total of \$196,738,444 for the 11 year period if the spreading decline scourge is not brought under control in the mean time.

Just what will be the outcome of this committee's study and their presentations to the Florida State Legislature and to the Senate subcommittee is, of course, not known. However the members of the group which made the Washington presentation came away from the Capitol much encouraged and feel that there is a marked possibility of securing federal financial support for the program.

There has been some tendency, it is reported, for groups outside the Highlands and Polk county areas where infestations are presently at the highest level, to hold back support for any sizeable budget to combat this infestation, but the trend of the infestation to spread with ever increasing rapidity is influencing many of the state's growers in other sections and the general public which is well aware of the importance of the citrus industry to the state to look ahead in anticipation that any research which may find the answer to this infestation will ultimately be of the greatest value to people outside the counties at present most seriously affected.

Radioactive fish swim in the Columbia River near the Hanford Atomic plant, according to the University of Florida Press book, "Our Atomic Heritage," by Arnold B. Grobman.

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# GREASY SPOT AND FACTORS RELATED TO ITS INTENSITY AND CONTROL IN FLORIDA CITRUS GROVES . . .

(Continued from page 7)

June or July, may have resulted in less greasy spot because of some direct action on the causal fungus rather than because of a reduction in the number of rust mites. The author and others have noted previously that sulfur dust plots have less greasy spot than do untreated controls. These facts lend credence to the belief that rust mites may be a contributing factor, but there are problems which need further clarification.

There was a striking difference in the amount of greasy spot between the oil parathion sprayed portions. By October, the difference between the two areas was obvious to the observer. Leaf drop in the parathion sprayed section was common in November, and following cold weather in early December, it became severe. Although some greasy spot ultimately developed in the oil sprayed sections, this did not appear until late November, and defoliation was not severe during the winter of 1954-55. The defoliated trees flushed in January and this growth was destroyed by frost on January 30.

A survey of greasy spot in more than 3,000 acres of grove in Polk and Highlands Counties was made in December, 1954. Table 1 shows the results for six citrus varieties where it was possible to compare the incidence of greasy spot following oil or parathion. It will be noted that in every instance, the parathion sprayed groves had a higher average incidence of greasy spot. While it cannot be concluded from this data, it is the opinion of the author that



Figure 1

The Valencia orange tree in foreground is typical of scattered Valentias in a Parson Brown orange block. The defoliated trees behind the Valencia show the typical variety contrast. Parson Brown had severe greasy spot and Valentias had very little. This phenomenon occurred in two different blocks.

parathion did not increase the incidence of greasy spot, but rather that oil sprays, in some way, tended to reduce it.

Table 1 shows an average greasy spot rating for duplicated plots on December 23 following the use of the three fungicides for the three dates that applications were made. By January 15, defoliation on control trees was much more severe than noted here. The July spray was very definitely the best in 1954; the August spray was somewhat better than the one applied in very late May; and

copper was distinctly superior to the other two materials. Whether or not July would always be the time when the most greasy spot is forming can only be determined after several years' investigation. It has been the opinion of the author that the critical time for the control of rust mites was in late June and July if greasy spot was to be prevented. This appears to tie in with the timing of the fungicide sprays in this experiment. However, it should be noted that rust mites were not a factor in this experiment and these previous observations may have no validity.

There are distinct varietal differences to greasy spot prevalence. Grapefruit trees are much more severely affected than oranges and probably oranges are more affected than tangerines or temple oranges. It appears entirely likely that pink Marsh seedless and Ruby Red grapefruit are more severely affected than either white Marsh or the seeded grapefruit varieties. In the December survey made by the author, greasy spot incidence was found in the following order: Pink Marsh Seedless grapefruit, Seeded grapefruit, Marsh Seedless grapefruit, Jaffa Oranges, Valencia oranges, Pineapple oranges, Tangerines and finally Temples. At least five blocks of each variety were examined and in some instances there were 25 or more different groves checked. These figures are not meant

Table 2  
Intensity of Greasy Spot on December 23 Following the Application of Three Fungicides

Date of Application	Actidione	Copper	Zineb	Avg.	Control
May 28	4.3	3.7	4.5	4.2	4.3
July	3.7	0.5	2.7	2.3	4.3
August 5	4.3	1.3	3.3	3.0	4.3
Average	4.1	1.6	3.5	—	—

\* Rated as in Table 1

Table 1  
A Comparison of the Severity of Greasy Spot Following Oil or Parathion Sprays in June or July 1954

Variety	Tangerine		Parson Brown		Ruby Red Grapefruit		Pink Marsh Grapefruit		Seedy Grapefruit		White Marsh Grapefruit	
Summer Scalecide	Para-Sulphur	Oil	Para-Sulphur	Oil	Para-Sulphur	Oil	Para-Sulphur	Oil	Para-Sulphur	Oil	Para-Sulphur	Oil
Number of Blocks Checked	11	2	3	4	2	2	5	6	8	4	8	11
Avg.* Rating	0.5	0	2.8	0.4	4.0	2.5	3.8	1.3	2.8	1.3	1.7	1.2

\* 0=None; 1=Very Light; 2=Moderate; 3=Common But Little Leaf Drop; 4=Some Leaf Drop; 5=Leaf Drop Common.

to be conclusive, but they do suggest that there are differences between varieties.

Similarly, age appears to be a factor in greasy spot incidence. Young trees are apparently more susceptible than older trees. This is true both for oranges and grapefruit and may help to explain why Pink Marsh seedless and Ruby Red grapefruit are worse than older varieties, since there are very few of these groves in Florida which are as much as ten years of age.

Sunshine appears to have some effect on the prevalence of greasy spot on an individual tree. It is commonly found that the south exposure of the tree will have a higher incidence than will the north side of the same tree. This may have some relation

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ship to the fact that the young trees appear to be more susceptible to greasy spot.

Disease or debility on any kind is of importance. When an individual branch on the tree is diseased, greasy spot is commonly worse on that single branch. In the summer of 1953, the author had an opportunity to observe trees which had been struck by lightning in two different groves.\* During the period of time between the injury from lightning and the time that either death or recovery occurred, greasy spot incidence was materially increased on the affected trees as compared with unaffected trees that were adjacent to them.

The above factors suggest that there must be a physiological relationship which is conducive to the formation of greasy spot. If this thought be carried further, it may be reasonably assumed that fertilization practice might also be a factor. There is some evidence in the field to support such a contention. During the past six years, a number of growers have placed their groves on a fertilization program which involved the use of straight nitrogen applications in the fall of the year. Difficulties have been encountered with such a program in many instances, and such difficulties have been enhanced by the presence of excessive amounts of greasy spot. This has been particularly true in grapefruit blocks. It is impossible to state here that fertilization practices and/or soil pH are factors in greasy spot formation, but the author considers that there is evidence to make such an idea worthy of consideration.

Spray programs are also factors in greasy spot formation. As noted above, it is possible that rust mites are of importance. Similarly, local greasy spot lesions form above scale insects. This has been observed by the author in Central America and the Caribbean Islands as well as in Florida. Thus, greasy spot follows insect injury.

The use of arsenic on grapefruit in Florida certainly increases the potential greasy spot hazard. It may be that the general debility makes the tree more susceptible rather than that arsenic per se is a factor. The effect of oil or parathion sprays as scalecide applications has already been noted.

The practical application of this discussion to groves which are being adversely affected with greasy spot cannot be completely ascertained at present; however, some suggestions can be made for groves where greasy

spot has been a continuing problem. In view of past opinion and observation, rust mite control should be carefully maintained during June, July and August. Oil sprays should be preferred to parathion-sulfur sprays as the scalecide application in June or July. Because of the hazard of copper injury on oranges, copper sprays should not be used as a summer application if the fruit is intended for the fresh fruit market. Since copper injury on grapefruit is ordinarily not severe, it may be practical to use copper on grapefruit or on cannery oranges in early July. Such usage should be a cautious one and confined to small areas until much more complete information is available. It is the suggestion of this author that until more information is available, copper be used as an individual application or in combination with parathion and sulfur, but that a copper oil spray not be used at the present time. Subsequent information may offer better and safer

fungicides than copper, but such data is not available now.

#### Literature Cited

1. Fisher, Fran. 1952, Annual Report of Florida Agricultural Experiment Station (In Press)
2. Tanaka, S. and S. Yamada, 1952. Studies on the Greasy Spot (Black Melanose) of citrus 1. Confirmation of the causal fungus and its taxonomic study. Bull. No. 1, Hort. Div., Nat'l Tokaikinki Ag. Sta. Okitsu Japan.
3. Thompson, W. L. 1948, Greasy spot citrus leaves, Cit. Ind. 29(4): 20-22
4. Thompson, W. L. 1954, Annual report of Fla. Ag. Exp. Sta. (In press)

Holmes County farmers are showing considerable interest in soil testing, according to County Agent John C. Russell. Recently 26 farmers had tests made from soils in several of their fields prearatory to spring planting. Farmers plan to follow the plant food nutrient recommendations for better crop yields.

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# How Many Citrus Trees Per Acre?

For a discussion of the over-all problem in determining planting distances to use, the following is by Dr. A. F. Camp, Vice Director in Charge, Citrus Experiment Station, from the bulletin, "Citrus Industry of Florida," published by the Department of Agriculture, Tallahassee, in cooperation with the University of Florida, Gainesville.

"The spacings commonly used in recent years have been 25 by 25 feet for oranges and this or 30 by 30 feet for grapefruit. This spacing is proving to be too close on light soils and wider spacings such as 30 by 30 for oranges and 35 by 35 for grapefruit are excellent. In older groves closer spacing was common, such as 20 feet by 20 feet, but such close spacing has been found disadvantageous as the grove becomes older due to the crowding of the trees, and when this crowding occurs it is very difficult to maintain the grove in good condition or to produce first-class fruit. Spacings such as 15 by 30 feet are very desirable where the grower is willing to remove the alternate trees somewhere between the 10th and 15th year, but unfortunately this frequently presents too much of a mental hazard, and interlocking trees present a problem when the grove passes 20 years of age. For that reason, double planting is not widely recommended. Many other systems of planting have been used at one time or another, but today either the square or rectangular spacing is used.

"The spacing problem is always a difficult one and usually results in a compromise. Basically it should be remembered that close spacing with large numbers of trees per acre gives much heavier early production, while wider spacings give better late production. Those who want quick production after planting a grove generally lean toward the closer spacings and those who are looking at the grove as a long-time investment generally lean to wide spacings. The Spanish accomplish both ends by very heavy hand pruning, planting frequently as close as 10 by 10 and keeping the trees pruned so that they just touch. Such spacings give very large numbers of trees per acre, with a 10 by 10 spacing giving over 400 trees per acre. Such a planting will have a very high yield at an extremely



— By —  
ZACH SAVAGE  
AGRICULTURAL ECONOMIST  
FLORIDA AGRICULTURAL EXPERIMENT STATION

early age, but would require a great deal of hand work to keep production up over a long run, though this is done successfully under Spanish conditions. Such groves, however, are at a great disadvantage when mechanical cultivation and spraying are done and are not at all practical under Florida conditions. A 20 by 20 spacing, which was standard years ago, gives 108.9 trees per acre, but when trees are budded on rough lemon, is too close for satisfactory operation of mechanical equipment by the 15th year; if budded on a slower growing stock, it may be satisfactory to the 20th year. A 25 by 25 spacing, which has been used for a great many years, gives 69.7 trees per acre and such groves are now having to be hedged in order to use mechanical spraying equipment. This is particularly true in the case of grapefruit. A 30 by 30 spacing gives only 48.4 trees per acre, but gives very fine production after 20 or 30 years of age but low production in the first 20 years. Such plantings are highly satisfactory for mechanical sprayers and other grove equipment. Plantings of 35 by 35

for grapefruit are even better in that regard but account for only 35.5 trees per acre, which results in extremely low production during the early years. Double spacings, such as 30 by 15, with 96.8 trees per acre, are very satisfactory in the early years, but will prove difficult to handle unless every other tree is taken out at about the 20th to the 25th year, leaving the trees 30 by 30 feet. Unfortunately very few growers are willing to take out trees and the result is a hedge-row effect which is extremely hard to spray, cultivate and pick. There are a number of these combinations for growers who are willing to take out trees at the proper time, that will help to give both a high early production and a high late production, with a slight dip for 2 or 3 years at the time the alternate trees are removed. A 20 by 20 spacing, with 108.9 trees per acre can be thinned on the diagonal at 20 to 25 years to a 28.3 by 28.3 spacing with 54.4 trees per acre, which makes a very good spacing up to 35 years for oranges and about 30 years for grapefruit. A 30 by 20 spacing will give 72.6 trees per acre, which is about the same as the 25 by 25 spacing, but it is not quite so convenient for cultivation and some other operations, though highly satisfactory for spraying. A 35 by 17½ spacing will give 71.1 trees per acre and can be thinned to a 35 by 35 spacing later when the trees begin to crow. A 25 by 25 spacing thinned on the diagonal to 35.4 by 35.4 with 35 trees would be very satisfactory for Marsh grapefruit if the thinning were done by the trees' 30th year, but as aforementioned, getting growers to take out trees is an almost insurmountable problem. The present practices of hedging may make this unnecessary if the hedging is done consistently.

"Generally speaking, the choices for spacing are about as follows: for a quick bearing grove that will show a profit early, a very close spacing with a high number of trees per acre; for a grove that will be at its best at 30 to 50 years of age or older, a wider spacing with less trees per acre; for a combination which will accomplish both, a spacing that is able to give a large number of trees per acre when the trees are young, followed by a thinning which will give a small number of trees and a wide spacing in the later years of



the grove. The grower will have to make his own decision in this matter because much depends on his own reasoning in planting the grove. Some other factors need to be taken into consideration, however. Rough lemon stock makes bigger trees than sour orange or some of the other dwarfing stocks, so some attention should be paid to stocks. Poor drainage also tends to keep down the size of trees and spacing can be closer under such conditions. The above discussion, however, should give a grower some idea of the problem which confronts him and enable him to make a proper selection to suit his particular purpose."

Most of the older Florida citrus groves are mixed with orange and grapefruit trees. Many groves also have up to 10 percent of the trees tangerines. In these mixed groves the setting distances are usually the

same for oranges, grapefruit and tangerines.

A study of a group of these mixed groves scattered over the citrus area since 1931 substantiates many of the statements made in the above quotation. Close spacing have resulted in many groves being hedged to alleviate some of the disadvantages in fruit production caused by interlocking tree limbs and to provide space where grove operations by machinery may be performed more efficiently without tree injury.

Young trees or other trees that have narrow limb spread do not occupy a great deal of space on the land. Under such conditions a large number of trees could have close spacing on the land and would yield a maximum of fruit per acre for trees of that size. However, since citrus have a commercially productive life of many years and continue to in-

crease in tree spread and height, young trees with ample space at the time may become seriously crowded with a few years added to their age and the corresponding increase in tree growth.

Data over the 22 seasons of 1931-52 indicate that for this period trees of mixed citrus from 5 to 24 years of age from time of setting had the maximum yield and net returns per acre where 80 to 99 trees were set per acre. There are several rectangular or square spacings that will place this range of trees per acre. Some of the more common spacings placing 80 to 89 trees per acre are 20 by 25 feet, 23 by 23, and 19 by 28 feet. Some spacings placing 90 to 99 trees per acre are 22 by 22, 18 by 25, and 15 by 30 feet. Other spacings are shown in Table 1.

After trees reach the age of 25 years, or thereabouts, spacings that place fewer trees per acre yield a higher number of boxes and higher net returns per acre. Settings of more than 50 trees per acre begin to get into trouble with yields and returns around 25 years of age, resulting in lower yields and net returns as trees

(Continued on page 20)

Table 1  
SETTING DISTANCES AND APPROXIMATE NUMBER OF TREES  
PER ACRE\*

Trees per acre	Square feet per tree	Setting distances in feet	Trees per acre	Setting distances in feet	Trees per acre	Setting distances in feet	Trees per acre
Under 50	881 and over	40x40	27	35x35	36	30x33	44
		36x42	29	33x34	39	25x40	44
		35x40	31	30x36	40	30x32	45
		34x38	34	30x35	41	30x31	47
		30x34	36	32x32	43	30x30	48
50 to 59	880 to 733	25x35	50	20x40	54	28x28	56
		27x32	50	27x30	54	23x33	57
		28x30	52	25x32	54	25x30	58
		29x29	52	23x35	54	26x29	58
		22x37	54	26x30	56	24x31	59
60 to 69	732 to 627	27x27	60	23x30	63	22x30	66
		25x28	60	20x34	64	25x26	67
		26x28	60	26x26	64	18x36	67
		20x35	62	24x28	65	23x28	68
		26x27	62	25x27	65	21x30	69
70 to 79	626 to 548	25x25	70	22x27	73	23x25	76
		24x26	70	23x26	73	24x24	76
		22x28	71	17x34	75	20x28	78
		21x29	72	19x30	76	22x25	79
		20x30	73	22x26	76	23x24	79
80 to 89	547 to 487	21x26	80	22x24	83	18x28	86
		18x30	81	20x26	84	21x24	86
		20x27	81	15x34	85	22x23	86
		23x23	82	16x32	85	20x25	87
		19x28	82	17x30	85	19x26	88
90 to 99	486 to 438	18x27	90	16x30	91	19x24	96
		21x23	90	17x28	92	15x30	97
		22x22	90	21x22	94	18x25	97
		15x32	91	17x27	95	20x22	99
		20x24	91	20x23	95	21x21	99
100 and over	437 and less	9x223	100	16x26	105	18x20	127
		15x29	100	15x27	108	19x19	121
		18x24	101	20x20	109	16x22	124
		16x27	101	18x22	110	18x19	127
		17x25	102	14x28	111	17x20	128
		14x30	104	15x25	116	13x26	129

\* Some of the spacings more commonly used are underlined.

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# Second Annual Citrus-Subtropical Fruits Institute, Lake Placid

June 8 and 9, 1955

## First Day

**PRESIDING** — Fred P. Lawrence, Citriculturist, Agricultural Extension Service.

9:00 — 9:15 a. m.

Florida's Horticultural Future — The potential of Florida's horticultural industries and the roll of the Horticultural Department at the University of Florida in servicing these industries.

Dr. Walter Reuther, Head, Department of Horticulture University of Florida.

9:15 — 9:45 a. m.

The Affect of a Fluctuating Water table on the Root-system of citrus Trees — Stabilizing the water table at a lower level increases the total rooting area and the newly developed roots survive without periodic destruction.

Dr. Harry W. Ford — Asst. Horticulturist, Citrus Experiment Station, Lake Alfred, Florida.

9:45 — 10:15 a. m.

The Use of Hormones to Prevent Fruit Drop — Most varieties of mid-season fruit have a tendency to shed their crop prematurely — can we overcome this through the use of hormone sprays?

Dr. J. W. Sites, Horticulturist, Citrus Experiment Station, Lake Alfred, Florida.

10:15 — 10:30 a. m.

Recess

10:30 — 11:00 a. m.

Report on the Tree Census Survey — In over 400 years of citrus history we have never had an inventory of our trees, and although the tree survey is not yet complete there have been many interesting facts turned up.

Joe N. Busby, Asst. Chief Inspector, State Plant Board.

11:00 — 11:30 a. m.

Losses in Young Citrus Plantings. Why are they Increasing? Florida now has some 73,000 acres of young non-bearing citrus and planting is continuing at the rate of about 15,000 acres per year. Losses in these young plantings have been from nothing to 50% — Why?

Dr. Gordon Grimm, Pathologist, USDA Horticultural Station, Orlando, Florida.

11:30 — 11:45 a. m.

Question and answer period.

11:45 — 1:00 p. m.

Lunch.

1:00 — 1:30 p. m.

Citrus Disease — What Are We Doing About Them? For the past three years we have been trying to get a bud-wood certification program under way. Here is a report on the progress made as well as the benefits we may expect from such a program.

Gerald Norman, Special Inspector, State Plant Board.

1:30 — 2:00 p. m.

Citrus Insect Problems on the Lower Ridge — The citrus insect pest control program will be discussed in general but particular emphasis will be placed on "greasy spot" and subsequent infestations of mites and scales where certain insecticides are used.

W. L. Thompson, Entomologist, Citrus Experiment Station, Lake Alfred, Florida.

2:00 — 2:15 p. m.

Recess.

2:15 — 2:45 p. m.

Soil Sampling — Its Value and How

to Use It. — Soils' analysis are a good tool to help the grower do a better job of producing fruit — but do you understand the correct way to take the samples and how to interpret the information after you get the laboratory report?

Dr. I. W. Wander, Soils Chemist, Citrus Experiment Station, Lake Alfred, Florida.

2:45 — 4:30 p. m.

Panel Discussion of Spreading Decline.

Joe N. Busby — Moderator  
Panel Members:

Mr. Ed. L. Ayers, Dr. E. P. Ducharme, Mr. Earl Hart, Dr. Julius Feldmesser, Mr. Frank Alexander, Mr. Chas. Holloway, C. D. Kime, Jr.

Your panel is composed of research men, production managers and practical growers who have a first hand knowledge of spreading decline. It is our hope that the panel will be able to answer any questions you

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Florida growers now consider magnesium a primary plant food in the same category with nitrogen, phosphorus and potash.

The recommendations of the Florida Citrus Experiment Station at Lake Alfred, published in January 1954, stress the need for large application of magnesium for Citrus in soluble form and state that it is usually applied as a Sulphate.

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have on spreading decline. The moderator will start the ball rolling by asking a few questions. You are invited to join in and ask what questions you would like.

8:30 — 8:35 a. m.

#### Announcements

8:35 — 10:30 a. m.

Panel Discussion of Citrus Fertilization.

Fred P. Lawrence — Moderator

Panel Members:

Dr. Walter Reuther, Mr. Bill Post, Arch Updike, Jr., Dr. H. J. Reitz, Mr. L. P. Johnson, Bill Jones, Edgar Davis (?)

Fertilization is half the cost of production — are you satisfied with your program? If not, maybe our panel can help you.

10:30 — 10:45 a. m.

Recess.

#### SUB-TROPICAL FRUIT SECTION

Jasper N. Joiner, Presiding

10:45 — 11:15 a. m.

Avocado and Mango Nutrition — The latest research information on nutritional needs of avocado and mango will be given plus fertilizer recommendations for coastal and interior sections of the state.

Dr. S. John Lynch, Professor of Horticulture, University of Miami.

11:15 — 11:45 a. m.

Clitocybe Rot of Lychees — Many new lychee plants have been seriously infected with the fungus clitocybe not, caused primarily from improper land clearing. Pictures of the disease will be shown along with recommendations for its control.

Dr. Mortimer Cohen, Plant Pathologist, State Plant Board.

11:45 — 1:00 p. m.

Lunch.

1:00 — 1:30 p. m.

Macadamia Nut Production in Florida. — What are the possibilities of growing macadamia nuts in Florida? Much information to answer this question will be covered plus other interesting factors concerning the history and growth requirements of this nut.

Seymour Goldwebber, Research Assistant, University of Miami.

1:30 — 2:00 p. m.

Insects and Diseases of Mangos — Insects and diseases not only reduce fruit quality, they also reduce the total crop as well as the growers net income. Dr. Reuhle will outline a spray program designed to improve existing conditions.

Dr. George D. Reuhle, Vice-Director-in-Charge, Subtropical Experiment Station, Homestead, Florida.

(Continued on page 20)

# CITRUS

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Water-Soluble Double Sulfate of Potash-Magnesia  
(K<sub>2</sub>SO<sub>4</sub> • 2MgSO<sub>4</sub>) 22% K<sub>2</sub>O—18% MgO

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Thousands of citrus growers are using fertilizers containing *Sul-Po-Mag* to supply the magnesium and potash their groves require.

Result . . . greatly improved yields of large, well-colored citrus that is high in sugar and vitamin content and holds up better in transit. *Sul-Po-Mag* benefits the trees, too . . . helps keep them healthy and productive and reduces excessive fruit droppage.

You see, *Sul-Po-Mag* delivers double crop-making power. It supplies water-soluble sulfate of magnesium in balanced combination with sulfate of potash.

*Sul-Po-Mag* is a regular ingredient in many quality citrus fertilizers and is also bagged for direct application. So ask your dealer now for a fertilizer containing *Sul-Po-Mag* . . . experience proves it pays!

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## Notes Of The Trade

### BAD NEWS FOR FLIES . . .

How would you like to spend four or five hours every day in a tiny room swarming with thousands of hungry flies?

For the past several months, that has been the torturous chore of Herman Mayeux, entomologist of Florida

a technician, after many hours of burning the midnight oil, came up with a revolutionary new approach to fly control.

Their product, after many successful field tests, was named "Fly Flakes." It consisted of small, dry granules and could be scattered around caged poultry, dairy barns, kennels, barbecue pits — almost everywhere that flies



During the past six months, these specialists have actually been living, day after day, in a room alive with thousands of highly-resistant flies. The flies were offered their choice of several hundred newly developed "baits" and a careful record was kept of the baits that proved most attractive. It's all part of a series of experiments by Florida Agricultural Supply Company, Jacksonville, to produce a super fly-killer. In foreground is Herman Mayeux, entomologist, and recording important important data is Paul E. Rowland, laboratory technician.

Agricultural Supply Company, and Paul E. Rowland, laboratory technician.

Their objective has been to develop further their highly effective fly killing product — which is in keeping with the company's program of continuous progress and product improvement.

Back in the Spring of 1954, Mayeux together with Julian Jackson, in charge of production and Jack Head, company chemists, and James R. Christie,

congregated. In less than six months, the product gained national recognition, and millions of pounds were scattered.

The new flakes, according to Mayeux, will kill flies even faster and remain effective longer than the history-making 1954 product. They are already in production and this new improved formulation will be distributed during the fly season of 1955.

Yankees weren't the first to come to Florida to escape cold weather and then settle down here and have their relatives join them. One migrating group beats the New Yorkers, Pennsylvanians, and the rest by thousands of years, according to Horton

H. Hobbs, Jr. In his book "The Crayfishes of Florida," distributed by the University of Florida Press, he says that crayfish have been coming into this state since the Pleistocene age and are still at it. Fortunately for the tourist trade, they don't believe in stopping at motels.

### WITH THANKS AND APPRECIATION . . .

This organization acknowledges with thanks and appreciation the receipt of a liberal donation of fine Indian River grapefruit from that veteran citrus grower, A. B. Michael of the Deerfield Groves. Mr. Michael is known as a leading grower throughout the State of Florida and the product of his groves has repeatedly won highest honors at exhibitions at the Florida Citrus Exposition. After sampling the fruit contained in his contribution to this organization we are more than willing to agree with the Indian River claim of producing the finest citrus fruit in the world—a statement in which every member of this organization heartily concurs. Again, thanks and appreciation.

### FLORIDA MAN TO LEAD CARIBBEAN SECTION OF HORTICULTURE SOCIETY

Dr. H. S. Wolfe, head of the department of horticulture in the University of Florida College of Agriculture, has been named chairman of the Caribbean Section, American Society for Horticultural Science. Dr. Wilson Popeno is secretary of the section.



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18"-24" Sizes and Larger  
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Substantial 'Sliding Scale' Discounts on quantity purchases for Grove plantings

You are cordially invited to visit our groves.

Your West Coast Head for all Subtropical Fruit Trees.

### PALMER NURSERIES

OSPREY, FLORIDA

J. M. Popham, Jr., Mgr.

LYCHEE  
FLORIDA LYCHEE GROWERS ASSOCIATION  
FLORIDA NURSERYMEN AND GROWERS ASSOCIATION  
AMERICAN ASSOCIATION OF NURSERYMEN



## RESEARCH ADVISORY COMMITTEE RECOMMENDS FUNDAMENTAL SOIL STUDIES . . .

The Soils-Water-Fertilizer Research Advisory Committee in its meeting this year has developed recommendations for research in (1) basic soil-water-plant relationships, (2) soil-plant-animal nutrition relationships, (3) fertilizer improvement, (4) watershed research, and (5) soil and water management research. Established under authority of the Research and Marketing Act of 1946, the committee meets annually. This year it met January 12-14, in Washington, D. C.

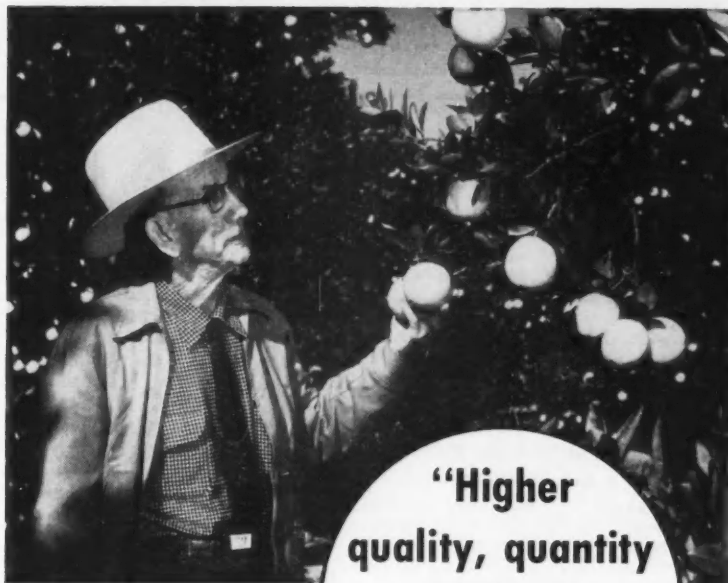
The Committee's top recommendations were:

Soil-water-plant relationships - (1) initiate research on the fundamental aspect of soil structure that affect the production of crops; (2) initiate comprehensive study of the complex interrelation of factors which influence the movement of water into and through soils; (3) expand present work on soil organic matter and nitrogen availability to include studies on how organic matter functions in the improvement of soil structure, water penetration and root extension, and initiate studies to determine why some nutrients tend to become "fixed" in the soil and are only slowly released to the plants.

Soil-plant-animal nutrition relationships - (1) In view of increasing industrialization, initiate studies of air contaminants on soils, plants, and nutrition; (2) expand studies of mineral interrelationships in animal nutrition. Fertilizer Improvement - Undertake research in the technology of fertilizer-pesticide mixtures, including the compatibility of pesticides with fertilizer materials, the preparation of mixtures having uniform composition, and the stability of the mixtures.

Citrus producers might remember 20 years ago when a certain ICC ruling reduced railroad rates for citrus about 63 per cent on Mondays, Thursdays, Fridays, and Saturdays, so that the railroads might meet the competition offered by shipping. These four days were the normal sailing days for the ships out of Jacksonville. The story of the development of these rates is contained in the University of Florida Press book, "Citrus Fruit Rates," by Truman C. Bigham and Merrill J. Roberts.

Shellac is derived from a substance secreted by tiny scale-insects found living on native forest trees in India.



Wesley J. Mann, Frostproof, pioneer Polk County citrus grower, inspects his d/p DOLOMITE-conditioned crop.

**"Higher  
quality, quantity  
and better  
solids content"**

... says Wesley J. Mann, veteran  
Frostproof citrus grower

Mr. Mann is thoroughly convinced that d/p DOLOMITE pays off heavily in greater citrus profits.

"Since I have been using d/p DOLOMITE, which has been more than 15 years, I've been getting finer quality, greater yield, better solids content and earlier maturity," he says.

"Some years ago I stopped using d/p DOLOMITE for awhile. I soon found my groves deteriorating and yield lighter.

"For the past 3 years I have been using about one ton per acre and have been able to observe grove improvement and better, bigger crops.

"I've found the free soil laboratory and fine field service of d/p DOLOMITE most helpful to me."

Use d/p DOLOMITE on YOUR groves and get the same benefits that have made Mr. Mann and many others ardent enthusiasts for d/p DOLOMITE. d/p DOLOMITE restores acid-alkali soil balance and supplies the calcium and magnesium essential to healthy plant and animal growth.

Dolomite Products has a complete line of liming materials - Dolomitic and Hi-Calcium Limestone bagged and bulk. Also dried Hi-Calcium Limestone bagged and bulk.

For information or arrangements to have a d/p DOLOMITE field representative call on you, write, wire or phone the address below—or see your local spreader.



# DOLOMITE

## PRODUCTS, INC.

HALL BUILDING, P.O. BOX 578, OCALA, FLORIDA

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# The LYONIZER

COMPILED BY THE LYONS FERTILIZER COMPANY

## Reports Of Our Field Men . . .

### WEST HILLSBOROUGH AND PINELLAS COUNTIES

J. A. Hoffman

Although we've had several showers during the past month, moisture is lacking in most groves. Hot windy days have dried out the moisture in most groves.

Six Spotted Mites have been worse this year than in a long time, causing much leaf droppage and dying of young growth. A strong Lime Sulfur solution was used in most groves for control, where moisture was lacking for an oil spray.

Growers are preparing to apply their Summer application of fertilizer beginning the first of May providing there is suitable amount of moisture. Cover crops will be sowed and disced in at that time. A heavy application of fertilizer will be applied at that time to take care of the tremendous new growth and heavy setting of fruit. Quantity and quality fruit is produced from Lyons Fertilizer.

### HIGHLANDS AND POLK

J. K. Enzor, Jr. &amp; R. E. Lassiter, Jr.

During the last two weeks of March all sections in this area received from two to four inches of rain. These rains were very welcome since almost all growers had started irrigating. Since that time showers have occurred in many sections and consequently the moisture at this time is very good. These rains seem to have assured fruit set of a very heavy bloom which we experienced this year.

Some early and mid-season blocks appear to be light but since the fruit has begun to size it looks as though they have a satisfactory crop.

Some difficulty has been experienced with heavy infestations of six-spotted mites as was predicted by the Experiment Station. Considerable spraying has been done for these mites.

To this date the fruit market has held up well and most growers are optimistic about the remainder of the Valencia season.

### SOUTH POLK, HIGHLANDS, HARDEE AND DESOTO COUNTIES

C. R. Wingfield

April showers, even though very spotted, have brought about a fair moisture condition that was very badly needed. The citrus grower would like to see more rain but the vegetable crops are at a stage more rainfall might be injurious.

Large citrus operators are formulating plans for their summer fertilizer application, and will no doubt have already begun by the time of this publication. Inspections should be made and needed plant foods supplied to insure proper feeding during the summer months. It is a little early to estimate the new crop but it would appear there will be a lighter early orange crop. Valencias had a very heavy bloom but they have not gone through that dropping period and it is a wild guess as to crop estimate. From all indications at this time the grapefruit crop will be heavy.

Vegetable growers have had a hard time this spring because of cold and frost. The late cold spell hurt the cucumber crop and delayed maturity. However, weather conditions have been better lately and plants have overcome the cold damage. Tomatoes are looking good and promise a good yield.

### EAST HILLSBOROUGH AND PASCO COUNTIES

E. A. McCartney

Had some welcome rain in most of this section. Groves look good and with the exception of early oranges which are a little light a good bloom is setting.

Pastures are looking good since the rain, where fertilizer had been put on.

Six-spotted mite and red spider are not as bad as they were. The rain checked them somewhat. Some scale as always. Spraying will start early.

Blight in melon fields has shown up in spots. Some gummy stem

trouble. This may be serious if not checked. Grapefruit almost at a standstill as far as sales are concerned. Valencia oranges are around \$1.75 to \$2.00 per box. This is a rumor — one can hear most anything — depending who is talking, the buyer or the grower.

### NORTH CENTRAL FLORIDA

V. E. Bourland

We have had very nice weather since rain Monday night which was welcomed by all growers. All indications now look as if we are going to have good setting of fruit on all varieties. Growers are busy spraying for different insects. Valencias are moving rather slow and price has been around \$1.75. Melons still look very good, and the growers are encouraged, and doing everything to make good melons.

### SOUTHWEST FLORIDA

Eaves Allison

Some grapefruit still remain on the tree in this section, and some Valencias are still waiting to be moved. The new crop is growing nicely, and with several good rains during the critical period, groves in this area have not suffered for moisture. The ravages of purple mite and six-spotted mite have been pretty severe in this section, with many groves showing much defoliation. Rust mite and scale build ups also have been on the heavy side.

Cuke prices have been high, and those growers who were lucky enough to have planted over again after the freezes have been well repaid. Some of the more conservative did not replant the last time, figuring the season too late for down here. However, the past howling blizzards put their good judgement to shame, and in the end good luck beat out good judgement to the tune of seven to twenty dollars per bushel for the crop that last replanting harvested. You never kin tell!

Tomatoes and glad crops are in fine vigor and yield and the prices are high. Those crops fertilized with that good Lyons Fertilizer are especially fine.

ADVERTISEMENT — LYONS FERTILIZER COMPANY



*Uncle Bill Says:*

Somehow or other we can't git over the idea that if we'd all jist git down to givin' serious thought to treatin' our neighbors and acquaintances, our bosses and our employees, like they was jest plain good, solid folks like we like to think we are, that maybe we'd git rid of a lot of the prejudice, confusion and turmoil that is takin' place every day right here in our home nation . . the finest, best and strongest in the whole darned world . . 'course such a program would entail livin' more or less by the Golden Rule, but so far as we can see they ain't a thing about that little treatise that would harm a single one of us.

Which may sound a little bit like preachin' . . . and coming from me that probably will be a little shockin' to some folks . . . but right on we think we've set forth a pretty sound suggestion.

But gittin' back to this business of raisin' citrus fruit and vegetables in Florida, which is of great interest to each of us, seems like we got through this season pretty good . . . despite certain price dissatisfaction fer us citrus growers and a lot of vegetable growers havin' to plant two or three times . . . but on the whole most folks seems to have gotten better'n a fair livin' out of the season's production.

And the outlook fer the comin' season is fer from discouragin' . . . a fact which is disclosed by the hundreds and hundreds of growers over the state who are right now gittin' ready to make their summer application of Lyons Fertilizers, so that their trees will keep well and strong and the crops they produce the best that nature and good plant food can provide.

One thing is fer sure more and more people in more and more sections of the world are finding how palatable good Florida citrus is and how much some real Florida citrus juice in it's varied forms adds to the meals which folks serve all over the nation and the rest of the world, too.

### GRADE STANDARDS FOR FROZEN CONCENTRATE FOR LIMEADE

The U. S. Department of Agriculture has issued United States standards for grades of frozen concentrate for limeade, the first to be formulated for this product.

The standards apply to a frozen product composed primarily of lime juice and sugar which, when diluted with a specified volume of water, will produce limeade. The product, developed and introduced by the lime industry only a few weeks ago, has received good acceptance by the public. The development of this product creates new and expanded market outlets for utilization of limes.

The standards provide for grades A, B, and Substandard, or Fancy, Choice and Substandard, based primarily on the color, absence of defects, and flavor of the prepared limeade. Basic requirements of the limeade when prepared according to the manufacturer's directions are that it test not less than 10.5 degrees Brix, contain not less than 0.7 gram anhydrous citric acid per 100 milliliters of limeade, and have a Brix/acid ratio not exceeding 18 to 1.

The standards became effective on publication in the Federal Register on April 26, 1955.

#### HOW MANY CITRUS TREES PER ACRE?

(Continued from page 13)

attain additional age and size. Trees from 25 to 39 years of age have higher yields and net returns with spacings placing from 60 to 79 trees per acre. Some of the common spacings placing trees per acre within this range are 20 by 35, 25 by 27, 25 by 25, 20 by 30, and 22 by 25 feet.

Trees 40 years of age or older yield a higher number of boxes of fruit per acre and higher net returns per acre with spacings that place less than 60 trees per acre of land. Some of these spacings are 25 by 30, 29 by 29, 25 by 35, 30 by 30, 25 by 40, 30 by 35, 35 by 35, 35 by 40, and 40 by 40 feet. See Table for approximate number of trees per acre in each spacing.

As indicated above, there are a number of factors and conditions entering into the determination of spacings for maximum yields and net returns. In general, however, it may be stated from data of this study that less than 80 trees should be set per acre. In most situations it would be still better for the number of trees per acre not to exceed 70. This is true of most varieties on most citrus

soils and rootstocks for grapefruit, oranges, and tangerines. There are many headaches to having too many trees on the land in addition to lower yields and lower net returns per acre. Upon becoming crowded, both yield and net returns decrease rather rapidly. This is especially true where hedging is not practiced. The pay-off comes in higher yields and higher net returns during the majority of the many seasons of the usually long life of citrus trees when not crowded.

#### SECOND ANNUAL CITRUS SUBTROPICAL FRUITS INSTITUTE, LAKE PLACID, JUNE 8 AND 9

(Continued from page 15)

2:00 — 2:30 p. m.

Insects Pest of the Major Subtropicals — An illustrated talk on methods of identifying and controlling the major pests of sub-tropical fruits in South Florida.

James E. Brogden, Entomologist Agricultural Extension Service, Gaines-

ville, Florida.

2:30 — 2:45 p. m.

Recess.

2:45 — 3:15 p. m.

When is an Avocado ripe? This question has long been a stumbling block to the avocado industry. Recently the USDA was invited to study the situation with the idea of helping us establish some of maturity standards. This is a report on the progress of this study.

Dr. James Soule, Pathologist, USDA Horticultural Station, Orlando, Florida

3:15 — 3:45 p. m.

The West Indian Cherry, Possibly a New Commercial Fruit for Florida—The history, culture and taxonomy of this interesting tropical fruit will be outlined. It is one of the highest available sources of Vitamin C known, it is a delicious fruit creating widespread interest in the state.

Dr. R. Bruce Ledin, Horticulturist, Subtropical Experiment Station, Homestead, Florida.

## Attention Citrus Growers

**NEW** MODEL C  
**Orchardkraft**  
AIR POWER **PRUNER**



#### New Features—New Performance

Offers many advantages not available on other pruners • New air-cushioned action (pat. pending) eliminates shock when limb is cut • Air-powered valves require only slight finger pressure to operate • No oiler needed • Simple trouble-free, freeze-proof valves • Cuts faster, easier • Won't slip off limb • Works in narrow places • Cuts limbs up to 1 1/4" diameter.

### Power Pruning --- Saves Costly Labor

Why hire four or five men with hand pruners when two men can prune faster and easier with this new Orchardkraft air-powered Pruner? Figure your labor rates for pruning — you'll quickly see why the Orchardkraft can more than save its cost the first season. Light weight.

**POUNDS MOTOR CO., Winter Garden**  
**POUNDS ZEISS TRACTOR CO., Sebring**  
**POUNDS TRACTOR CO., Winter Haven**  
**POUNDS TRACTOR CO., Lakeland**



## FLORIDA 4-H CLUB BOYS ELIGIBLE FOR SCHOLARSHIPS

The Southern Dolomite Company of Palmetto has announced an annual 4-H Club agriculture scholarship to the University of Florida. All Florida 4-H Club boys are eligible to apply.

R. Eugene Smith, President of Southern Dolomite, said the scholarship will amount to \$200 a year for four academic years or \$250 per calendar year, including academic and summer school for three years. One scholarship will be made available each year, beginning with the 1955-56 school year.

The scholarship has been approved by W. W. Brown, State Boys' 4-H Club agent who cooperated with Smith in working out details and regulations. Candidates must be bona-fide 4-H Club boys who have graduated, or will graduate, from an accredited secondary school and who ranked in the upper 50 per cent on High School placement tests. Candidates can not have previously attended college.

Those who qualify must execute the "Florida 4-H Achievement Report Form" and submit an essay, not to exceed 1,500 words, on "The Importance of Limestone to Florida Agriculture." Pertinent personal history information must also be given.

Smith said full information will be given each county agent or prospective candidates can write directly to Southern Dolomite in Palmetto for details. Applications must be submitted to the State Boys' 4-H Club office at the University of Florida not later than June 1.

Announcement and presentation of the scholarship award will be made during the annual Boys' 4-H Club

short course at the University of Florida which meets each June.

"Each 4-H Club boy in the state who is really interested in a career in agriculture has an opportunity to secure this Scholarship," said Smith. "Our only interest is to make a slight contribution to the progress and future of agriculture in the state."

## ORANGE GRAPE PRODUCT FEATURES NEW VARIETY

Bringing grape production back to Orange County is the object of the Lake Emerald grape project, says

County Agent F. E. Baetzman. Lake Emerald was developed at the Florida Agricultural Experiment Station Laboratory at Leesburg.

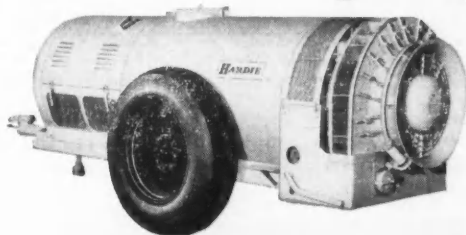
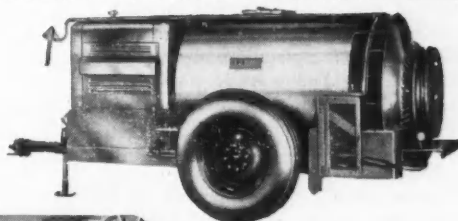
The project, financed by the Orlando Sentinel, is under the direction of a committee including Mr. Baetzman, Col. A. H. Rogers, C. D. Wilder, Jr., and A. E. Pickard, a former grape grower.

In the winter 35,000 grape cuttings were put in callousing beds for two months preparatory to planting in nursery rows. A year from now the young vines will be made available to the public at cost, the committee reports.

**HURRICANE**

Model DF-26A

Equipped with two, 26 in. fans and powered by the Ford V-8 Industrial Engine, delivering 140 HP at 2600 RPM, easily dismounted for other uses. The Hardie pump delivers 100 GPM at 120 psi.

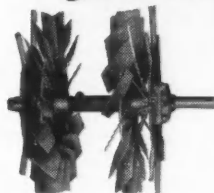


**HURRICANE**

Model DF-26B, left

Completely streamlined. Unusually narrow tread. Two, 26 in. fans. Powered by the Ford Industrial Engine, delivering 108 HP at 2600 RPM. The Hardie pump delivers 70 gpm at 125 psi.

## HARDIE ALONE HAS IT!



## The 2-Fan Sprayer You've Been Asking For

Two, axial flow fans, mounted with opposed blades on a single shaft and scientifically balanced constitute the amazing, new feature of the Hardie Hurricane Duo-Fan Sprayers. The advantages of this 2-fan assembly are priceless. Here's what it does:

- Gives you an absolutely uniform distribution of air and spray over the entire radius of fan housing and boom.
- Delivers tremendous, maximum, high velocity air volume at slow speed.
- Accurate, scientific fan balancing eliminates wear and tear of excessive vibration.
- All controls under the hand of tractor driver.
- Handles concentrate, semi-concentrate and dilute sprays.

Two fans are better than one. Find out what this means to you.

The Hardie Mfg. Co., Hudson, Michigan  
Please send Sprayer Catalog.

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Ask your dealer. Write for the new Hardie Catalog.



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## FLORIDA LIME MARKETING AGREEMENT

The provisions of a proposed marketing agreement and order program for regulating the handling of Florida limes were announced recently by the U. S. Department of Agriculture in a recommended decision based upon evidence received at a public hearing at Homestead, Fla., on March 1 - 3, 1955.

The marketing agreement and order would authorize the issuance of regulations limiting the grade, size, and quality of shipments of Florida limes. The program also authorizes regulation of the size, capacity, weight, dimensions, or pack of the containers used for lime shipments and provides for the establishment of marketing research projects to improve, assist, or promote the marketing, distribution, and consumption of limes.

Persons desiring to file written exceptions to the recommended decision may do so with the Hearing Clerk, Department of Agriculture, Washington 25, D. C., not later than April 29, 1955.

Copies of the recommended decision are available in the office of M. F. Miller, Field Representative,

## NEW CITRUS RECIPES PROMINENTLY FEATURED

The American housewife is hearing more and more about citrus fruits, and the hundreds of new recipes using citrus products are as tempting and colorful as the fabulous sunshine state of Florida where most of the nation's citrus fruits are produced.

The February issue of "Woman's Day," a magazine distributed nationally through the A&P food stores, is currently featuring six and one-half pages of full color layout entitled "There's More To An Orange Than Juice." In all, eighteen appealing photographs depict some of the many ways the housewife can make use of oranges, tangerines, grapefruit, limes, lemons, and kumquats.

Accompanying the photo layouts, the text of the article points out that alone, or in combination with other foods, citrus fruits are one of our most versatile foods.

First plantings of rami in the United States were made in Florida in 1944.

Fruit and Vegetable Division, Citrus Mutual Building, Lakeland, Fla.

## Classified Ads

**SUPERIOR CITRUS TREES** — Now accepting orders for Valencia and Pineapple on rough lemon for next Winter planting. Most other varieties available now. Call us 2-7541 for quotation. Leaflet "Tips for Growers" mailed on request.

WARD'S NURSERY

Box 846

Avon Park, Florida

**FOR SALE:** Hairy Indigo Seed Common (late) Indigo \$38.00 CWT. Early Indigo \$40.00 CWT. F. O. B. Haines City, Florida. Good purity and germination. Order early, short crop. Lewis & Vickers, Box 1117, Haines City, Florida.

**FOR SALE** — Limited number of Improved Jewel Peach Trees on Non-tode Resistant Stock. CLAY HILL NURSERIES COMPANY, Box 2888, Tampa, Florida.

**PERSIAN LIME TREES** — Ready for delivery. Other popular varieties all on rough lemon root, for delivery now in January, 1955.

ADAMS CITRUS NURSERY

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### FOR SALE

Several thousand Parson Browns on Sour Root Stock, 1" to 1 1/2" caliper. Also have Navels, Pineapples, Dancy Tangerines, Valencias, Murcoits — Pretty Trees. Contact J. EDWIN CAUTHEN, P. O. Box 842, Leesburg, Florida.

## THE RIGHT FERTILIZERS MAKE THE DIFFERENCE!

Higher production at lower costs often means the difference between profit and loss. The **right** fertilizer mixtures for specific crops and soil types can be the answer to this problem. The makers of Florida Favorite Fertilizer have made an extensive study of Florida crops and soils and formulate fertilizer mixtures to the individual grower's needs for best results. This means more efficient and more economical fertilization. Try FFF Brand Fertilizers. You'll profit too!

### DIRECT DELIVERY SERVICE

Complete field service with truck  
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# ARAMITE®

## KILLS MITES

**The safest, most  
effective citrus  
mite killer on the market**

Citrus yields are better, citrus sales bigger when you apply Aramite. It's today's safest, strongest, most profitable way to combat the ever-present mite menace.

Extensive usage has proved Aramite gives effective immediate and residual control of Purple Mite (Citrus Red Mite) and Six-Spotted Mite on citrus. Recommended by the Florida Agricultural Experiment Station. Aramite is effective

against mite adults, nymphs and eggs—immediately stops feeding of adults and young and kills within 72 hours. Field usage has definitely established Aramite-Sulfur compatibility—whether Aramite is tank-mixed with wettable sulfur or field-sprayed before or after sulfur dusting or spraying. Safe on citrus, leaves no harmful residue, is non-hazardous to handlers and does not kill off beneficial insects.

**Order Aramite from your local supplier today. Write, wire or phone us if unable to locate immediate source of supply.**



# Naugatuck Chemical

Division of United States Rubber Company  
**Naugatuck, Connecticut**



producers of seed protectants, fungicides, miticides, insecticides, growth retardants, herbicides: Spergon, Phygon, Aramite, Synkior, MH, Alanap, Durasol.

nc.  
ORIDA



# Now Is The Time To Look Ahead

With the summer season right here upon us every grower realizes the need for providing his trees with the plant food essential to the development of strength in the trees which will set and mature fine crops of fruit . . . and which will aid your trees in withstanding the ravages of pests and weather.

Already many growers have started their summer application of fertilizer and virtually all growers are making their plans to carry on this important feature of their overall production program within the next two or three weeks.

The prime requisite of every grower is to see that his trees receive the particular plant foods they may require in order to obtain the most satisfactory results . . . and it may be that they are completely aware of what those requirements may be, but in case outside counsel is desired our Field Service Men will gladly consult with any Florida Grower in an effort to assist in securing the best results for his crops.

We're proud of the fact that for many years a lot of Florida's most successful growers have made a practice of using Lyons Fertilizers . . . and for those who haven't tried these fertilizers we recommend that no better time than right now will be found to demonstrate how effective and how completely satisfying are the results to be obtained by the use of our fertilizers.

## Lyons Fertilizer Company

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MAXIMUM CROPS  
of  
HIGHEST  
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